

HALBY CHEMICAL OU2
ADMINISTRATIVE RECORD FILE
INDEX OF DOCUMENTS * **

I. SITE IDENTIFICATION

1. Memorandum to Mr. Robert Kramer, U.S. EPA, from Mr. Gordon Howard, U.S. EPA, re: Transmittal of Site Analysis Interim Report, 10/29/87. P. 100001-100016. The October 1987 Site Analysis Interim Report is attached.
2. Memorandum to Mr. Stephen Jarvela, U.S. EPA, from Mr. James Turner, Roy F. Weston, Inc. (Weston) re: Preliminary Assessment Survey concerning the Halby Chemical Company, 3/7/89. P. 100017-100020.

* Administrative Record File available 3/9/93, updated 7/30/97, 9/8/97, 9/17/97, 4/29/98, and 10/2/98.

** This Administrative Record File for Halby Chemical OU2 incorporates by reference the Administrative Record File for Halby Chemical OU1 dated 2/24/92; Halby Chemical Administrative Record File for Removal Response Actions dated February 22, 1995, and July 6, 1995.

II. REMEDIAL ENFORCEMENT PLANNING

F & H Transport, Inc.

1. Letter to Mr. Herbert Bollman, F & H Transport, Inc., from Mr. Abraham Ferdas, U.S. EPA, re: 107(a) general notice letter, 4/8/97. P. 200001-200009. A certified mail receipt is attached.

The Pyrites Company, Inc.

1. Letter to Mr. Ian White-Thomson, The Pyrites Company, Inc. (Pyrites), from Mr. Abraham Ferdas, U.S. EPA, re: 107(a) general notice letter, 4/7/97. P. 200010-200017. A certified mail receipt is attached.

Witco Corporation/Argus Chemical Corporation

1. Letter to Mr. William Toller, Witco Chemical Corporation (Witco), from Mr. Abraham Ferdas, U.S. EPA, re: 107(a) general notice letter, 3/6/95. P. 200018-200024. A certified mail receipt is attached.
2. Letter to Mr. William Toller, Witco, from Mr. Abraham Ferdas, U.S. EPA, re: 107(a) general notice letter, re-confirming notification, 6/30/95. P. 200025-200030. A certified mail receipt is attached.

III. REMEDIAL RESPONSE PLANNING

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1. Report: Halby Chemical Company, Operable Unit 2 Site, Remedial Investigation/Feasibility Study (RI/FS) Work Plan, prepared by CH2M Hill, 11/92. P. 300001-300109. A cover letter is attached.
 2. Letter to Mr. Paul Ambrose, U.S. EPA, from S. Gladstone, Witco, re: Suggestion of abatement schedule concerning the proposed permit for liquid effluent, 9/24/73. P. 300110-300112. A sketch of Halby Pond and a summary table of New Castle County non-domestic discharge ordinance are attached.
 3. Letter to Mr. Stephen Wassersug, U.S. EPA, from N.C. Vasuki, Delaware Department of Natural Resources and Environmental Control (DNREC), re: Notification of the discharge of Halby Division, Argus Chemical Corporation, New Castle, Delaware, in compliance with the provisions of the National Pollution Discharge Elimination System (NPDES), 11/6/73. P. 300113-300114.
 4. Letter to Mr. Shaul Gladstone, Witco, from R. Bartchy, DNREC, re: Transmittal of final NPDES permit, 5/2/77. P. 300115-300127. The April 26, 1977, permit is attached.
 5. Memorandum to Mr. Robert Caron, U.S. EPA, from Mr. Greg Janiec, Weston, re: Notification of sampling and site assessment performed at the Halby Chemical Site, 3/28/85. P. 300128-300129. A March 29, 1985, sketch map with sample locations is attached.
 6. Memorandum to Ms. Lynn Neveling and Mr. Bhupi Khona, Weston, from Mr. Earl Hansen, Weston, re: Laboratory charges for analysis of samples submitted for the Halby Chemical Site, 4/16/85. P. 300130-300145. Volatile Compounds data are attached.
 7. Memorandum to Mr. Robert Caron, U.S. EPA, from Mr. Bhupi Khona, Weston, re: Summary report reviewing the analysis of water and soil samples submitted on March 29, 1985, 4/19/85. P. 300146-300148.
 8. Memorandum to Mr. Robert Caron, U.S. EPA, from Ms.
- ⁺ Confidential Business Information has been removed from this document.

Lynne Neveling and Mr. Greg Janiec, Weston, re: Transmittal of analysis of four samples collected at the site on March 28, 1985, and a set of photographs taken during the assessment, 5/2/85. P. 300149-300161. The sampling data and a location map with pertinent sampling locations are attached.

9. Memorandum to Mr. James Butch, U.S. EPA, from Mr. Bruce Molholt, U.S. EPA, re: Review of preliminary toxics assessment, and comments to further characterize the site and its toxics impact, 5/9/85. P. 300162-300163.
10. Memorandum to Mr. Charles Walters, Centers for Disease Control (CDC), from Mr. Jeffrey Pike, U.S. EPA, re: Transmittal of information package concerning the site, and request for a review of the data to determine if the site poses an imminent and substantial risk to human health, 5/17/85. P. 300164-300203. The information package is attached.
11. Memorandum to Mr. Charles Walters, U.S. EPA, from Office of Health Assessment Acting Director, CDC, re: Notification of CDC rescinding its recommendations for public access restriction and additional site characterization, 10/3/85. P. 300204-300204.
12. Letter to Mr. Douglas Fox, U.S. EPA, from Mr. Joseph J. Hardman, DNREC, re: Transmittal of Terminal Avenue borehole location maps, 10/5/87. P. 300205-300207. Two maps are attached.
13. Memorandum to Mr. Douglas Fox, U.S. EPA, from Mr. Michael Wilson, Weston, re: Trip report for October 1, 1987, visit to the site, 10/5/87. P. 300208-300217. The following are attached:
 - a) a map of sampling locations at the site;
 - b) October 24, 1987, sampling results;
 - c) an October 24, 1987, analytical information table;
 - d) a November 9, 1987, addendum to thiocyanate testing procedures used in the October 24,

1987, analytical results; and

e) an Organics Analysis Data Sheet.

14. Memorandum to Mr. Doulgas Fox, U.S. EPA, from Mr. Michael Wilson, Weston, re: Recommendation to conduct specific site sampling at the site, 10/6/87. P. 300218-300219. A layout map of the site is attached.
15. Sampling results, 10/24/87. P. 300220-300224.
16. Addendum to report of October 24, 1987, summarizing a discussion on thiocyanates, prepared by Martel, 11/9/87. P. 300225-300225.
17. Memorandum to Mr. Robert Kramer, U.S. EPA, from Mr. Gordon Howard, U.S. EPA, re: Transmittal of final report for the Halby Chemical Company, concerning the analysis of seven years of aerial photography, 12/17/87. P. 300226-300227.
18. Memorandum to Mr. Joseph Hardman, Delaware Department of Health (DDH), from Mr. Edward Montz, DDH, re: Response to request for comments on whether the site constitutes an imminent public health threat, and recommendations for protecting public health and the environment, 1/11/88. P. 300228-300231.
19. Sample Data Summary Package, 1/19/88. P. 300232-300258.
20. Memorandum to Mr. Charles Walters, U.S. EPA, from Mr. David Mellard, Agency for Toxic Substances and Disease Registry (ATSDR), re: Response to review of environmental sampling data to determine if an emergency response action is necessary to reduce exposure to site contaminants, 5/13/88. P. 300259-300261.
21. Letter to Mr. Darius Ostrauskas, U.S. EPA, from Mr. Robert Shockley, Brandywine Chemical Company (BCC), re: Transmittal of a site plan of tanks on the property of

BCC, a drawing of the drainage system at the plant site, and a tank and drum inventory of the chemicals, 11/7/88. P. 300262-300264. The drawing and the inventory are attached.

22. Report: Toxicity Test Report, Halby Chemical, prepared by U.S. EPA, 12/28/88. P. 300265-300279.
23. Memorandum to Mr. Darius Ostrauskas, U.S. EPA, from Mr. Gary Bryant, U.S. EPA, re: Transmittal of toxicity test results for the site, 1/9/89. P. 300280-300280.
24. Report: Preliminary Health Assessment for Halby Chemical, prepared by ATSDR, 1/4/89. P. 300281-300285.
25. Report: Wetland Delineation for Halby Chemical Site, prepared by U.S. Fish and Wildlife Service, 3/89. P. 300286-300296. An April 5, 1989, transmittal letter to Mr. Darius Ostrauskas, U.S. EPA, from Mr. John Wolflin, U.S. Fish and Wildlife Service, is attached.
26. Memorandum to Mr. Walter Lee, U.S. EPA, from Ms. Bette Strange, Mr. John Fellingner, Mr. Dennis Matlock, and Mr. Bob Guarni, Weston, re: Summary of an emergency site assessment performed on July 13, 1989, at the Brandywine Chemical Co., previously known as the Halby Chemical Co., 7/13/89. P. 300297-300303. A site map and a quadrant map are attached.
27. Memorandum to Mr. Gregg Crystall, U.S. EPA, from Mr. Walter Lee, U.S. EPA, re: Reassessment of the site on July 13, 1989, due to potentially leaking tanks and drums, and a recommendation of no further action, 11/13/89. P. 300304-300304.
28. Memorandum to Mr. Robert Kramer, U.S. EPA, from Mr. Donald Garofalo, U.S. EPA, re: Transmittal of Report Reproduction of Site Analysis, 12/19/89. P. 300305-300305.
29. Letter to Ms. Paula Retzler, U.S. EPA, from Mr. Thomas Andersen, DNREC, re: Transmittal of the April 18, 1989, data on air sampling performed at the site, 1/2/90. P. 300306-300321. The data is attached.
30. Report: Benthic Macro invertebrate Study, Halby Chemical Site, prepared by U.S. Fish and Wildlife Service, 1/90. P. 300322-300333. A March 26, 1990, transmittal letter to Ms. Paula Retzler, U.S. EPA, from

Mr. John Wolfin, U.S. Fish and Wildlife Service, is attached.

31. Letter to Ms. Paula Retzler, U.S. EPA, from Mr. Frank Tsang, Ebasco Services Incorporated (Ebasco), re: Transmittal of the Site Analysis, dated December 1987, concerning historical aerial imagery, 3/5/90. P. 300334-300335. A March 5, 1990, Federal Express air bill is attached.
32. Report: Historical Account of Wetlands, Halby Chemical Site, prepared by the U.S. Fish and Wildlife Service, undated. P. 300336-300343. A March 26, 1990 transmittal letter to Ms. Paula Retzler, U.S. EPA, from Mr. John Wolfin, U.S. Fish and Wildlife Service, is attached.
33. Letter to Ms. Roberta Riccio, U.S. EPA, from Mr. Gary Paulachok, U.S. Geological Survey (USGS), re: Correspondence to summarize the field activities and findings of the USGS investigation of tidal effects on ground water movement at the site, 7/18/90. P. 300344-300421. The following are attached:
 - a) stage hydrography for the tidal lagoon;
 - b) water-level hydrography for well SMW-01;
 - c) stage data for the tidal marsh;
 - d) water-level hydrography for well SMW-02;
 - e) a complete set of level notes for the site.
34. Memorandum to Dr. Joseph Larfornara, U.S. EPA, from Ms. Roberta Riccio, U.S. EPA, re: Request for technical assistance and support from the Environmental Response Team in establishing ecological impacts on wetlands adjacent to the site, 7/25/90. P. 300422-300422.
35. Memorandum to Ms. Roberta Riccio, U.S. EPA, from Mr. Richard Brunner, U.S. EPA, re: Results of risk calculations concerning the exposures to workers at the operating facility on the site, 2/15/91. P. 300423-300426.
36. Report: Analytical Chemistry and Solid Phase Toxicity Bioassay on the Halby Chemical Company Superfund Site New Castle County, Delaware, prepared by U.S. Fish and Wildlife Service, 4/91. P. 300427-300721.

37. Letter to Ms. Faye Stocum, Delaware Historic Preservation, from Ms. Roberta Riccio, U.S. EPA, re: Request for a cultural resource survey to determine known or potential historic sites located on or in the vicinity of the site, 3/25/92. P. 300722-300726. A summary of the status of the site, a site map, and a site location map are attached.
38. Letter to Ms. Faye Stocum, Delaware Historic Preservation, from Ms. Roberta Riccio, U.S. EPA, re: Transmittal of Remedial Investigation/Feasibility Study (RI/FS) Work Plan for the site, 3/30/92. P. 300727-300727.
39. Memorandum to Mr. Mark Sprenger and Ms. Roberta Riccio, AScl Corporation (AScl), from Ms. Teresa Norberg-King and Mr. Gary Ankley, U.S. EPA, re: Transmittal of a summary of the toxicity tests performed on eight samples, request for a site map, description and location, and request for samples from three of the original sites, 4/30/92. P. 300728-300734. The April 30, 1992, report of initial toxicity tests is attached.
40. Report: Environmental Assessment Terminal Avenue Rail Crossing New Castle County Delaware, prepared by EA Mid-Atlantic Regional Operations (EA), 4/92. P. 300735-300814. A July 16, 1992, transmittal letter to Mr. Eric Newman, U.S. EPA, from Mr. Charles Davis Wilder, EA, is attached.
41. Memorandum to Mr. Eric Newman, U.S. EPA, from Ms. April Lloyd, CH2M Hill, re: Oversight of Operable Unit 1 (OU1) surface soil grid sampling on January 21, 1993, 1/29/93. P. 300815-300823. Photographs of the sampling are attached.
42. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant D. Vyas, Witco, re: Submittal of revised schedule and list of planned activities for the Treatability Study of the soils at Halby Chemical Site OU1, 3/18/93. P. 300824-300831. Directions to the Edgemore Materials asphalt plant, an updated analytical results table from

the Soil Grid Sampling, and an updated Chain of Custody Form are attached.

43. Report: Halby Chemical Company Operable Unit 2 Site Sampling and Analysis Plan, prepared by CH2M Hill, 3/93. P. 300832-301204.
44. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant D. Vyas, Witco, re: Transmittal of first revision of Treatability Study Report for the OU1 site, 6/3/93. P. 301205-301205.
45. Memorandum to Mr. Eric Newman, U.S. EPA, from Ms. Kerry Iliff, CH2M Hill, re: Summary of findings from a wetland reconnaissance conducted at the Operable Unit 2 (OU2) Site, 6/16/93. P. 301206-301229. A June 16, 1993, transmittal letter to Mr. Eric Newman, U.S. EPA, from Mr. Robert W. Root, Jr., CH2M Hill, is attached
46. Letter to Ms. Patricia Miller, U.S. EPA, from Ms. Valerie C. Hahn, BCC, re: Notification that BCC does not intend to remain in the chemical business, in response to EPA request, 7/14/93. P. 301230-301230.
47. Letter to Mr. Rajnikant D. Vyas, Witco, from Mr. Eric Newman, U.S. EPA, re: Background information on the site and Witco's concerns about performance of remedial design for OU1, 8/2/93. P. 301231-301232.
48. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant D. Vyas, Witco, re: Progress report for the period of July 4, 1993, through August 4, 1993, 10/9/93. P. 301233-301234.
49. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Edmund R. Papazian, Witco, re: Request for recognition of clean-up delay as a force majeure event under the Consent Decree, and proposal to meet with the EPA to discuss undertaking a Focused Feasibility Study (FFS) at the site, 8/13/93. P. 301235-310235.
50. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant D. Vayas, Witco, re: Submission of proposed plan for the OU1 FFS, in light of BCC's intention to cease operations, 11/12/93. P. 301236-301239.
51. Memorandum to Ms. Cynthia E. Caporale, U.S. EPA, from Hari Prasad and Mahboobeh Mecanic, Lockheed

- Environmental Systems & Technologies Company (Lockheed), re: Inorganic Data Validation results from aqueous samples taken at the site, 3/23/94. P. 301240-301254. A March 28, 1994, transmittal memorandum to Mr. Eric Newman, U.S. EPA, from Ms. Cynthia E. Caporale, U.S. EPA, is attached.
52. Letter to Ms. Lisa Senior, USGS, from Ms. Bernice Pasquini, U.S. EPA, re: Transmittal of ground water sample results, 4/14/94. P. 301255-301255.
53. Memorandum to Mr. Eric Newman, U.S. EPA, from Ms. Joan Dollarhide, U.S. EPA, re: Transmittal of a Risk Assessment (RA) Issue Paper for Provisional RfD for Cobalt, and a RA Issue Paper for Derivation of a Provisional RfD for Thicyanate, 1/30/95. P. 301256-301274. The RA Issue Papers are attached.
54. Handwritten sampling notes and data for the Halby Chemical Site, author not cited, 2/13/95. P. 301275-301356.
55. Letter to Mr. Eric Newman, U.S. EPA, from Ms. Valerie Hahn, BCC, re: Notification that BCC properly removed all bulk chemicals stored in designated tanks within 90 days of signing the Consent Decree, 6/22/95. P. 301357-301357.
56. Ditch sample locations and data, prepared by the Technical Assistance Team, 6/95. P. 301358-301367.
57. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant D. Vyas, Witco, re: Providing security at the site to prevent unauthorized site access, 8/4/95. P. 301368-301368.
58. Report: Drainage Area Site Security Plan, prepared by Langan Engineering and Environmental Services, Inc. (Langan), 8/15/95. P. 301369-301413. An August 8, 1995, report entitled Site Specific Health and Safety Plan, Halby Chemical Site, prepared by Langan, and an August 15, 1995, transmittal letter to Mr. William Bell, Communications for Public Safety, from Mr. William Mercurio, Langan, are attached.

59. Letter to Mr. Eric Newman, U.S. EPA, from Mr. William Mercurio, Langan, re: Transmittal of the Drainage Area Site Security Plan, a security fence drawing, and notification that security fence construction will begin on August 21, 1995, 8/18/95. P. 301414-301414.
60. Memorandum to Mr. Rajnikant D. Vyas, Witco, from Mr. William Mercurio, Langan, re: Plan for soil samples from six test pits to be collected from the base of the water main, 8/28/95. P. 301415-301416.
61. Memorandum to Mr. Eric Newman and Ms. Jane Biggs-Sanger, U.S. EPA, from Ms. Carole Sforza and Mr. Bill Mercurio, Langan, re: Proposal of activities and schedule for EPA review and approval, 9/14/95. P. 301417-301424.
62. Letter to Mr. Eric Newman, U.S. EPA, from Mr. William Mercurio, Langan, re: Transmittal of preliminary results from the water line investigation, 9/20/95. P. 301425-301434. The preliminary results are attached.
63. Electronic mail memorandum to Mr. John Kelly, U.S. EPA, from Ms. Lynn Wilder, U.S. EPA, re: Chemical odors at the site and request for advice on what to sample for in the air, 10/27/95. P. 301435-301437. An October 20, 1995, electronic mail memorandum to Mr. John Kelly, U.S. EPA, from Mr. Richard Nickle, U.S. EPA, and an October 20, 1995, electronic mail memorandum to Mr. David Barry, Mr. Richard Nickle, and Mr. Scott Wright, U.S. EPA, from Mr. John Kelly, U.S. EPA, are attached.
64. Letter to Mr. Mike Towle, U.S. EPA, from Ms. Libby Levy, Weston, re: Transmittal of the Multi-Media Sampling Plan for review, 11/8/95. P. 301438-301452. The Sampling Plan (undated) is attached.
65. Report: Halby Chemical Site Review of Constituent of Concern Toxicity, prepared by Environmental Resources Management, Inc. (ERM), 11/14/95. P. 301453-301468. A November 14, 1995, transmittal letter to Mr. Eric Newman, U.S. EPA, from Mr. Richard Dulcey, ERM, is attached.
66. Report: Trip Report Halby Chemical Site, author not cited, 11/20/95. P. 301469-301491.

67. Letter to Mr. William Bell, Delaware Public Safety, from Mr. William Mercurio, Langan, re: Notification that work will begin at the site on December 4, 1995, 11/28/95. P. 301492-301492.
68. Letter to Mr. Eric Newman, U.S. EPA, from Mr. William Mercurio, Langan, re: Notification of planned field activities and schedule of work to begin, 11/29/95. P. 301493-301494.
69. Report: Alternative Remedial Contracting Strategy Program, Sampling and Analysis Plan, Halby Chemical Company, Operable Unit 1 ERA Oversight, prepared by CH2M Hill, 11/95. P. 301495-301734.
70. Memorandum to Mr. Eric Newman, U.S. EPA, from Mr. Charles McCusker, Langan, re: Request for approval of Code Environmental Services, Inc. to install the fence, excavate test pits, and perform site rehabilitation, 12/1/95. P. 301735-301735.
71. Letter to Mr. Eric Newman, U.S. EPA, from Mr. William Mercurio, Langan, re: Notification that fence supplies were delivered to the site, and that the installation will begin on December 5, 1995, 12/4/95. P. 301736-301736.
72. Letter to Mr. Eric Newman, U.S. EPA, from Mr. William Mercurio, Langan, re: Notification that sampling test pits within the limits of the drainage ditch/lagoon will not be excavated due to the fire/explosion which occurred during a previous excavation, 1/10/96. P. 301737-301737.
73. Letter to Mr. Eric Newman, U.S. EPA, from Mr. William Mercurio, Langan, re: Notification that field work will commence again on January 29, 1996, 1/25/96. P. 301738-301739.
74. Letter to Mr. Rajnikant D. Vyas, Witco, from Mr. Eric Newman, U.S. EPA, re: EPA review and comments concerning the Review of Constituent of Concern Toxicity report dated November 14, 1995, 2/5/96. P. 301740-301741.
75. Letter to Mr. Eric Newman, U.S. EPA, from Mr. William Mercurio, Langan, re: Notification that Trillium, Inc. was selected to perform data validation services for support of the site, 2/7/96. P. 301742-301742.

76. Letter to Mr. Eric Newman, U.S. EPA, from Mr. William Mercurio, Langan, re: Submittal of proposal to collect Treatability Samples at the site on April 2, 1996, 3/25/96. P. 301743-301744.
77. Letter to Mr. Mark Sawyer, Conrail Engineering, from Mr. William Mercurio, Langan, re: Notification that excavation activities will start on April 2, 1996, that samples will be collected from within the Conrail right-of-way, and invitation for Conrail to have a representative on site during the sampling, 3/25/96. P. 301745-301745.
78. Letter to Mr. Ted Harris, United Water Delaware, from Mr. William Mercurio, Langan, re: Notification that excavation activities will start on April 2, 1995, and invitation for United Water Delaware to have a representative on site during sampling, 3/25/96. P. 301746-301746.
79. Mr. Eric Newman, U.S. EPA, from Mr. William Mercurio, Langan, re: Notification that Fahrenthold and Associates has been selected as the Treatability Study contractor, and request for acceptance, 3/29/96. P. 301747-301748.
80. Memorandum to Mr. Rajnikant D. Vyas, Witco, from Mr. William Mercurio, Langan, re: Transmittal of the meeting minutes of April 2, 1996, 4/4/96. P. 301749-301750.
81. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Robert Root, CH2M Hill, re: Review of Potentially Responsible Party (PRP) Risk Evaluation, 4/18/96. P. 301751-301753.
82. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Robert Root, CH2M Hill, re: Review of PRP Screening Treatability Study Work Plan, 4/18/96. P. 301754-301756.
83. Memorandum to Ms. Joanne Benante and Mr. Eric Newman, U.S. EPA, from Ms. Joan Dollarhide, NCEA, re: Review of thiocyanate RfD proposed by Witco for the Stauffer Chemical Site and the Halby Chemical Site, 5/13/96. P. 301757-30161. A June 7, 1996, letter regarding the Stauffer Superfund Site is attached.

84. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Robert Root, CH2M Hill, re: Review of PRP Progress Report - Treatability Study, 5/28/96. P. 301762-301764.
85. Report: Analytical Report, prepared by Weston, 5/96. P. 301765-301806. A May 31, 1996, transmittal memorandum to R. Singhvi, U.S. EPA, from V. Kansal, Weston, is attached.
86. Memorandum to Ms. Joanne Benante, U.S. EPA, from Dr. Harlal Choudhury, U.S. EPA, re: Review and comments on thiocyanate RfD proposed by Witco for the Stauffer Chemical Site and the Halby Chemical Site, 6/18/96. P. 301807-301809.
87. Memorandum to Ms. Joanne Benante and Mr. Eric Newman, U.S. EPA, from Dr. Harlal Choudhury, U.S. EPA, re: Response to request for oral toxicity information on Thiocyanate, 6/25/96. P. 301810-301825. The RA Issue Paper for Derivation of a Provisional RfD for Thiocyanate is attached.
88. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Robert Root, CH2M Hill, re: Review of PRP Progress Report - Treatability Study, 7/1/96. P. 301826-301830.
89. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant D. Vyas, Witco, re: Transmittal of the Laboratory Treatability Study Report, 7/2/96. P. 301831-301832.
90. Memorandum to Ms. Joan Mattox, from Mr. Ed Barth and Mr. Ron Turner, U.S. EPA, re: Comments on the Treatability Study Summary Report concerning a review of the lab study only, 7/3/96. P. 301833-301833.
91. Letter to Mr. Rajnikant D. Vyas, Witco, from Ms. Joanne Benante, U.S. EPA, re: Revision of the provisional RfD for the toxicity of thiocyanate at the Stauffer Superfund Site, 7/8/96. P. 301834-301835.
92. Memorandum to Ms. Joan Mattox, from Mr. Roy Turner, U.S. EPA, re: Comments concerning the Laboratory Treatability Study Report, 7/11/96. P. 301836-301836.
93. Letter to Mr. Richard Dulcey, ERM, from Mr. Eric Newman, U.S. EPA, re: Summary and outline of issues discussed during the July 15, 1996, teleconference, 7/16/96. P. 301837-301839.

94. Report: Field Treatability Study Plan, Oxidation of Carbon Disulfide in Soils, Halby Chemical Site, New Castle, Delaware, prepared by ERM, 7/18/96. P. 301840-301859. A July 19, 1996, transmittal letter to Mr. Eric Newman, U.S. EPA, from Mr. Richard Dulcey, ERM, is attached.
95. Memorandum to Mr. Eric Newman, U.S. EPA, from Mr. Ruth Baker, ERM, re: Transmittal of a Gas Collection Experiment Equipment Configuration figure, 7/19/96. P. 301860-301861. The figure is attached.
96. Memorandum to Mr. Eric Newman, U.S. EPA, from Mr. Michael Towle, U.S. EPA, re: Review and comments concerning the Draft Field Treatability Study Plan, Oxidation of Carbon Disulfide in Soils, 7/19/96. P. 301862-301865.
97. Report: Volume One Executive Summary Report, Halby Chemical Site, prepared by Weston, 7/96. P. 301866-301913.
98. Report: Final Analytical TAGA Report, Halby Chemical Site, prepared by Weston, 7/96. P. 301914-302093.
99. Letter to Mr. Eric Newman, U.S. EPA, from Witco, re: Response to comments concerning the treatability studies being conducted on soils from the site, 8/6/96. P. 302094-302097.
100. Memorandum to Mr. Eric Newman, U.S. EPA, from Mr. Richard Dulcey, ERM, re: Transmittal of the description of the Treatability Study Program and the analytical list proposed for the samples, 8/15/96. P. 302098-302101.
101. Memorandum to Mr. Eric Newman, U.S. EPA, from Mr. Richard Dulcey, ERM, re: Transmittal of tables from the June 28, 1996, Remedial Action Report, 8/15/96. P. 302102-302108. The tables are attached.
102. Memorandum to Mr. Peter Knight, from Berit Bergquist, EVS Consultants, re: Questions concerning whether contamination in the area can be attributed solely to the site from the widespread use of contaminated fill

throughout the area, and the role of ammonia in the observed toxicity of sediments and surface water, 8/29/96. P. 302109-302117. Six tables are attached.

103. Letter to Mr. Eric Newman, U.S. EPA, from Ms. Jane Biggs-Sanger, DNREC, re: Request for a decision regarding the future status of Deep Monitoring Well number 7 (DMW-7), concerning the Terminal Avenue Road expansion, 9/20/96. P. 302118-302118.
104. Letter to Ms. Jane Biggs-Sanger, DNREC, from Mr. Eric Newman, U.S. EPA, re: EPA decision that the most reasonable course of action concerning DMW-7 and the Terminal Avenue Road Expansion is to accept Delaware Department of Transportation's proposal to abandon the well in conformance with State of Delaware Well Regulations, 9/20/96. P. 302119-302119.
105. Letter to Mr. Richard Dulcey, ERM, from Mr. Eric Newman, U.S. EPA, re: Results of EPA calculations of target carbon disulfide concentrations, 9/20/96. P. 302120-302122. The calculations and assumptions are attached.
106. Memorandum to Mr. Eric Newman, U.S. EPA, from Mr. Richard Dulcey, ERM, re: Review of Thiocyanate degradation concerning the byproducts formed from soil at the site, 9/25/96. P. 302123-302123.
107. Letter to Mr. Richard Dulcey, ERM, from Mr. Eric Newman, U.S. EPA, re: EPA results concerning the recalculation of the target carbon disulfide concentration, 10/17/96. P. 302124-302127. The supporting calculations and assumptions are attached.
108. Letter to Mr. Eric Newman, U.S. EPA, from Ms. Valerie Hahn, BCC, re: Re-notification that although Brandywine no longer deals in the chemical business, the company is still in business, and that cleaning an occupied site will take more coordination than cleaning an abandoned site, 10/23/96. P. 302128-302128.
109. Memorandum to Mr. Eric Newman, U.S. EPA, from Mr. Rich Dulcey, ERM, re: Examination of the carbon disulfide data for soil at the site, and calculation of the

number of confirmation samples required to demonstrate that the clean-up objectives have been met, 11/27/96. P. 302129-302135. The data table for the treatment zone and two charts are attached.

110. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rich Dulcey, ERM, re: Transmittal of the updated Final Laboratory Treatability Study data summary table, an accompanying memorandum, and a letter which responds to EPA's November 15, 1996, comments regarding the Field Treatability Study Plan, 12/3/96. P. 302136-302137. The updated Final Laboratory Treatability Study data summary table is attached.
111. Memorandum to Mr. Eric Newman, U.S. EPA, from Mr. Rich Dulcey, ERM, re: Results of a caustic soak experiment and transmittal of the updated Final Laboratory Treatability Study data summary table, 12/3/96. P. 302138-302141. The updated Final Laboratory Treatability Study data summary table is attached.
112. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Raj D. Vyas, Witco, re: Additional input concerning EPA's November 15, 1996, comments regarding the Field Treatability Study Plan and the approval of the plan, 12/3/96. P. 302142-302146.
113. Report: Halby Chemical Company Operable Unit 2 Site Remedial Investigation Report, Volume 1: Text, prepared by CH2M Hill, 1/97. P. 302147-302950.
114. Letter to Mr. Richard Dulcey, ERM, from Mr. Eric Newman, U.S. EPA, re: EPA's agreement that discharge of the excess "inactive" sodium percarbonate solution, remaining from a recent treatability study is appropriate and acceptable, 1/16/97. P. 302951-304344.
115. Letter to Mr. Richard Dulcey, ERM, from Mr. Eric Newman, U.S. EPA, re: EPA's response to Witco's November 27, 1996, proposed methodology for determining the appropriate number of soil samples to be collected, post-treatment, 1/16/97. P. 304345-304345. The January 6, 1997, response, concerning sampling for verification of cleanup, is attached.
116. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Robert Bujalski, Witco, re: Progress Report for January 16, 1997, through January 31, 1997, and a list of planned

activities for the next reporting period, 1/31/97.
P. 304346-304348.

117. Report: Halby Chemical Company Operable Unit 2 Site Remedial Investigation Report, Volume 2: Appendices, prepared by CH2M Hill, 1/97. P. 304349-304350.
118. Report: Phase 2 Field Treatability Study Plan, Oxidation of Carbon Disulfide in Soils, Halby Chemical Site, prepared by ERM, 2/24/97. P. 304351-304385. A February 26, 1997, transmittal Letter to Mr. Eric Newman, U.S. EPA, from Mr. Raj D. Vyas, Witco, is attached.
119. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Raj D. Vyas, Witco, re: Progress Report for February 16, 1997, through February 28, 1997, and a list of planned activities for the next reporting period, 2/28/97. P. 304386-304391. A data summary, a revised Final Laboratory Treatability Study Result table, and a tentative Phase 2 Field Treatability Study schedule, are attached.
120. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Raj D. Vyas, Witco, re: Progress Report for March 1, 1997, through March 15, 1997, and a list of planned activities for the next reporting period, 3/14/97. P. 304392-304396. The revised removal action project schedule and an Arsenic Investigation Metals Analysis data table are attached.
121. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Richard Dulcey, ERM, re: Summary of the emissions modeling results concerning evaluation of the potential downwind carbon disulfide concentrations resulting from the in-situ oxidation of carbon disulfide-impacted soils at the site, and transmittal of a summary table which provides the modeling results, 3/19/97. P. 304397-304399. The table is attached.
122. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Raj D. Vyas, Witco, re: Progress Report for March 16, 1997, through March 31, 1997, and a list of planned activities for the next reporting period, 3/31/97. P. 304400-304404. Two Phase II Pre-treatment Soil Analytical Summary Tables are attached.
123. Report: Phase 2 Field Treatability Study Plan, Oxidation of Carbon Disulfide in Soils, Halby Chemical

Site, prepared by ERM, 4/7/97. P. 304405-304450. An April 7, 1997, transmittal letter to Mr. Eric Newman, U.S. EPA, from Mr. Raj D. Vyas, Witco, is attached.

124. Letter to Mr. Raj D. Vyas, Witco, from Mr. Eric Newman, U.S. EPA, re: Brandywine notification to EPA of its intention to discontinue its chemical business, undated. P. 304451-304451.
125. Letter to Mr. Gary Paulachok, USGS, from Ms. Mindi Snoparsky, U.S. EPA, re: Request for work on the Halby Chemical Superfund Site, and transmittal of a statement of work which describes the goals for the investigation, undated. P. 304452-304454. A March 7, 1994, Statement of Work for USGS is attached.
126. Memorandum to Mr. Hector Abreu, U.S. EPA, from Ms. Libby Rhoads, U.S. EPA, re: Notification of wetland areas that may be impacted by the site, and recommendation that the Environmental Impact and Marine Policy Branch be contacted to accurately delineate the wetland boundaries, undated. P. 304455-304455.
127. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Robert Root, CH2M Hill, re: Review and comments concerning the Field Treatability Study Plan, Oxidation of Carbon Disulfide in Soils, dated July 18, 1996, undated. P. 304456-304458.
128. Report: Historical Account of Wetlands, Halby Chemical Site, prepared by U.S. Fish and Wildlife Service, undated. P. 304459-304465.
129. Report: A Biological Assessment of the Halby Chemical Company Superfund Site, prepared by U.S. Fish and Wildlife Service, undated. P. 304466-304548.
130. Record of Communication to File, from Mr. Jeff Pike, re: Water supply for two trailers located near the site, undated. P. 304549-304549.
131. Handwritten notes regarding Halby Chemical tanks, author not cited, undated. P. 304550-304590.
132. Report: Response Action Plan, Halby Chemical Superfund Site, Wilmington, New Castle County, Delaware, prepared by Langan, 10/8/95. P. 304951-305952. A November 20, 1995, transmittal letter to Mr. Eric Newman, U.S. EPA,

from Mr. Raj D. Vyas, Witco, re: response to EPA comments on the Response Action Plan (RAP), is attached.

133. Report: Response Action Report, Halby Chemical Superfund Site, Wilmington, New Castle County, Delaware, prepared by Langan, 6/28/96. P. 305953-306204. A June 28, 1996, transmittal letter to Mr. Eric Newman, U.S. EPA, from Mr. Raj D. Vyas, Witco, is attached.
134. Letter to Mr. Eric Newman, U.S. EPA, from Ms. Jane Biggs Sanger, DNREC, re: DNREC's intention to institute ground water restrictions and prevent access to ground water at the Port Of Wilmington and its Environs, including Halby, 7/23/97. P. 306205-306206.
135. Proposed Plan, Halby Chemical Site OU2, 7/30/97. P. 306207-306253.
136. Report: Surface Water Quality Standards, prepared by DNREC, 2/26/93. P. 306254-306331.
137. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: Witco's submittal of the Focused Feasibility Study (FFS) for Halby Chemical Site OU1, 3/29/96. P. 306332-306588. The March 29, 1996, FFS is attached.
138. Report: Potts Property Remedial Investigation Status Report, prepared by DNREC, 3/97. P. 306589-306626.
139. Report: Comprehensive State Ground-Water Protection Program, prepared by DNREC, 5/97. P. 306627-306872.
140. Report: Halby Chemical Company Operable Unit 2 Site Feasibility Study Report, prepared by CH2M Hill, 7/97. P. 306873-307339.
141. Information package: Halby Chemical Alternate Cost Estimate Proposed Plan, prepared by CH2M Hill, 7/28/97. P. 307340-307377.
142. Report: State of Delaware Groundwater Management Plan, prepared by DNREC, 11/1/97. P. 307378-307423.
143. Memorandum to Mr. Eric Newman, U.S. EPA, from Ms. Lynn Flowers, U.S. EPA, re: Toxicological review of the

cleanup levels for arsenic at the site, 8/14/97.
P. 307424-307424.

144. Handwritten note to Mr. Eric Newman, U.S. EPA, from Ms. Lynn Flowers, U.S. EPA, re: Cleanup levels for residential soil at the site, 8/18/97. P. 307425-307425.
145. Report: Federal On-Scene Coordinator's Report, Halby Chemical Site, prepared by U.S. EPA, 2/3/95.
P. 307426-307506.
146. U.S. EPA Notice, included in the Hazard Ranking System package, to clarify what the Halby Chemical Company National Priorities Site represents, and to ensure that the listing is consistent with policy, 7/31/95.
P. 307507-307507.
147. Memorandum to Mr. Don Henne, U.S. Department of the Interior (DOI), Mr. Peter Knight, National Oceanic and Atmospheric Administration (NOAA), Mr. Anthony Conte, U.S. DOI, Ms. Sharon Shutler, NOAA, from Mr. Eric Newman, U.S. EPA, re: Notification of the RI/FS nearing completion, and request for DOI and NOAA to initiate the development of their position on granting a Covenant not to Sue for Natural Resource Damages, 2/13/97. P. 307508-307509.
148. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: Comments on the Proposed Plan to confirm that the remedy selected is protective and cost-effective, 9/29/97. P. 307510-307519.
149. Report: Working Copy, Memorandum of Agreement, DNREC, between Division of Air and Waste Management and Division of Water Resources, for Halby Chemical, Federal Superfund Site and Environs, Wilmington, New Castle County, Delaware, prepared by DNREC, 1/98.
P. 307520-307531. The following are attached:
 - a) attachment 1, "Halby Chemical Site" map;
 - b) attachment 2, "Potts Site" map;
 - c) attachment 3, "Port of Wilmington Site" map;
 - d) attachment 4, "Comparison of 1906, 1936, and

1993 Wetlands Extent" map;

- e) attachment 5, "Aerial Extent of Groundwater Management Zone for Halby Chemical Co. and Environs" map;
 - f) attachment 6, "Halby Chemical Site and Environs Vertical Extent of Groundwater Management Zone" figure.
150. Memorandum to Mr. Eric Newman, U.S. EPA, from Ms. Lynn Flowers, U.S. EPA, re: Suggestions for the responses to comments that pertained to health risks, 2/18/98. P. 307532-307532.
151. Record of Decision (ROD), Halby Chemical Superfund Site, Wilmington, New Castle County, Delaware, prepared by U.S. EPA, 3/98. P. 307533-307663.
152. Letter to Mr. Abraham Ferdas, U.S. EPA, from Mr. Nicholas Di Pasquale, DNREC, re: DNREC's concurrence with the March 1998 ROD for the site, 3/30/98. P. 307664-307665.
153. Memorandum to Mr. Eric Newman, U.S. EPA, from Mr. Paul Wettlaufer, USACE, re: Confirmation of the site wetlands area and recommendations for ROD modifications, (undated). P. 307666-307667. A March 20, 1998, electronic mail transmittal memorandum to Mr. Eric Newman, U.S. EPA, from Ms. Rebekah Hicks, USACE, is attached.
154. Report: Historical Account of Wetlands, Halby Chemical Site, New Castle County, Delaware, prepared by U.S. Fish and Wildlife Service, (undated). P. 307668-307674.

IV. REMOVAL RESPONSE PROJECTS

1. U.S. EPA Spill Notification #1, Halby Chemical Site, 2/11/85. P. 400001-400001.
2. U.S. EPA Pollution Report #1, Halby Chemical Site, 3/8/85. P. 400002-400002.
3. U.S. EPA Pollution Report #2, Halby Chemical Site, 3/20/85. P. 400003-400003.
4. U.S. EPA Pollution Report #3, Halby Chemical Site, 3/28/85. P. 400004-400004.
5. Memorandum to Mr. Neil Wise, U.S. EPA, from Mr. Phillip Retallick, U.S. EPA, re: Request for the assignment of an attorney to the Halby Chemical Site, which requires an immediate and/or planned removal, 5/6/85. P. 400005-400005.
6. U.S. EPA Pollution Report #4, Halby Chemical Site, 5/20/85. P. 400006-400006.
7. U.S. EPA Pollution Report #5, Halby Chemical Site, 7/22/85. P. 400007-400007.
8. Memorandum to Mr. Abraham Ferdas, U.S. EPA, from Mr. Gerald Heston, U.S. EPA, re: Notification that a removal action is not warranted at this time, 9/30/85. P. 400008-400008.
9. Memorandum to Mr. Charles Walters, U.S. EPA, from Mr. Stephen Margolis, ATSDR, re: Notification that the site data does not indicate that there is a potential public health threat, and that CDC rescinds its recommendations for public access restriction, 10/3/85. P. 400009-400009.
10. U.S. EPA Pollution Report #6, Halby Chemical Site, 10/1/87. P. 400010-400010.
11. U.S. EPA Pollution Report #8, Halby Chemical Site, 1/5/88. P. 400011-400011.
12. Memorandum to Mr. Charles Walters, U.S. EPA, from Mr.

David Mellard, ATSDR, re: Review and comments concerning environmental sampling data collected from the site to determine if an emergency response action is necessary to reduce exposure to site contaminants for the surrounding population, 5/13/88. P. 400012-400014.

13. U.S. EPA Incident Notification Report, Halby Chemical Site, 3/7/89. P. 400015-400015.
14. U.S. EPA Special Bulletin A, Halby Chemical Site, 2/3/95. P. 400016-400026. A removal notification and a site description are attached.
15. Letter to Mr. Francis DiGiovanni, Richards, Layton & Ginger, from Ms. Judith Nichols Renzulli, Duane, Morris & Heckscher, re: Confirmation that Witco and EPA will make a site visit on March 31, 1995, to review relevant operations of Brandywine and the emergency removal action, 3/24/95. P. 400027-400027.
16. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant D. Vyas, Witco, re: Request for the work scope concerning the removal of carbon disulfide contaminated soil in the ditch at the site, and request for analytical laboratory testing results on soil samples obtained from the drainage ditch, 6/20/95. P. 400028-400028.
17. Letter to Mr. Rajnikant D. Vyas, Witco, from Mr. Eric Newman, U.S. EPA, re: Approval of Witco's proposal to utilize Code Environmental to perform fence installation and other potentially intrusive site stabilization activities for the removal action at the site, 12/1/95. P. 400029-400029.
18. Removal Technical Information sheet, Halby Chemical Site, 2/13/95. P. 400030-400037. A Removal Chemical Information sheet and a site description are attached.
19. Memorandum to Mr. Eric Newman, U.S. EPA, from Ms. Nancy Rios Jafolla, U.S. EPA, re: Toxicological review and comments concerning Toxicity/Soil Clean-up Levels for the Removal Action, 1/12/96. P. 400038-400045. Five tables are attached.
20. New Removal Assessment Fact Sheet, Halby Chemical Site, undated, P. 400046-400047.

21. National Priorities List Site status sheet, Halby Chemical site, undated. P. 400048-400048.
22. Memorandum to Mr. Douglas Fox, U.S. EPA, from Mr. Michael Wilson, Weston, re: Trip report for the October 1, 1987, site visit, 10/5/87. P. 400049-400049.
23. Memorandum to Mr. Douglas Fox, U.S. EPA, from Mr. Michael Wilson, Weston, re: Recommendation for a specific site sampling due to the absence of current information on contaminants at the site, 10/6/87. P. 400050-400052. An undated site layout map, "Halby Chemical Site RI/FS Work Plan" is attached.
24. Letter to Mr. Mike Wilson, Weston, from Dr. Robert Edwards, Martel Laboratory Services, Inc. (Martel), re: Analysis of four samples taken on October 1, 1987, 10/24/87. P. 400053-400055.
25. Letter to Mr. Darius Ostrauskas, U.S. EPA, from Mr. Robert Shockley, Jr., Brandywine Chemical Company (Brandywine), re: Transmittal of a site plan of the tanks currently located on the Brandywine property along with a drawing of the drainage system, and an explanation of Brandywine's tank and drum policy, 11/7/88. P. 400056-400058. A November 7, 1988, inventory of tank storage and warehouse and outside yard drum storage, and an undated site plan are attached.
26. Memorandum to file and Mr. Gregg Crystall, U.S. EPA, from Mr. Walter Lee, U.S. EPA, re: Results of the July 13, 1989, reassessment of the site indicating that no evidence of leaking tanks or drums was found and that the lagoon situation had not visibly changed, 11/13/89. P. 400059-400059.
27. U.S. EPA Notification of Hazardous Waste Activity form, prepared by Ms. Roberta Riccio, U.S. EPA, 4/5/90. P. 400060-400061.
28. Facsimile memorandum to Ms. Roberta Riccio, U.S. EPA, from Mr. Paul Kefauver, International Technology Corporation (ITT), re: Transmittal of a Notification of Hazardous Waste Activity form, 4/5/90. P. 400062-

400064. The undated form is attached.
29. DNREC Uniform Hazardous Waste Manifest form, copy 6, 4/17/90. P. 400065-400065.
 30. DNREC Uniform Hazardous Waste Manifest form, copy 7, 4/17/90. P. 400066-400066.
 31. DNREC Uniform Hazardous Waste Manifest form, copy 8, 4/17/90. P. 400067-400067.
 32. DNREC Uniform Hazardous Waste Manifest form, copy 3, 4/19/90. P. 400068-400069. An envelope postmarked May 8, 1990, is attached.
 33. National Priority List (NPL) Site Certification, Halby Chemical Site, 9/23/91. P. 400070-400070.
 34. NPL Site Certification, Halby Chemical Site, 6/25/93. P. 400071-400071.
 35. Letter to Ms. Valerie Hahn, Brandywine, from Mr. Rajnikant Vyas, Witco, re: Request for access to the site on February 14, 1995, 2/10/95. P. 400072-400072.
 36. Table, "Halby Chemical - Leachate Water Samples," (no author cited), 3/23/95. P. 400073-400083. A March 23, 1995, table, "Halby Chemical - Leachate Sediment Samples" and an undated facsimile transmittal to Mr. Eric Newman, U.S. EPA, from Mr. Bob Root, CH2M Hill, are attached.
 37. Figures and sample analysis tables entitled "Halby Chemical Site, 'Ditch' Sample Locations, June 1995, Technical Assistance Team," (no author cited), 6/95. P. 400084-400093. The following are attached:
 - a) a table, "Halby Chemical Site 'Ditch' Samples, Carbon Disulfide Samples: June 1995;"
 - b) a table, "Halby Chemical Site 'Ditch' Samples, Ignitability, Reactive Cyanide + Sulfide and Ammonia: June 1995;"
 - c) a table, "Halby Chemical Site 'Ditch' Samples, Metals (mg/Kg) (Selected): June 1995;"

- d) a table, "Halby Chemical Site 'Ditch' Samples, Volatile Organics (mg/Kg): June 1995;"
 - e) a table, "Halby Chemical Site 'Ditch' Samples, Volatile Organic TICs (mg/Kg): June 1995;"
 - f) a table, "Halby Chemical Site 'Ditch' Samples, Volatile Organic TICs: June 1995."
38. State of New Jersey Department of Environmental Protection and Energy Uniform Hazardous Waste Manifest form, 6/15/95. P. 400094-400095.
39. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Robert Gallagher, Nuclear Sources & Services, Inc. (NSSI), re: Return of the original copy of the manifest form used for shipping hazardous wastes to NSSI, 6/15/95. P. 400096-400098. A June 13, 1995, Texas Water Commission Uniform Hazardous Waste Manifest form and a June 1, 1995, NSSI Radioactive Waste Shipment & Disposal Manifest form are attached.
40. Letter to Mr. William Toller, Witco, from Mr. Abraham Ferdas, U.S. EPA, re: Re-confirmation of the March 6, 1995, notification of potential liability and notification of additional removal activities at the site which Witco has indicated a willingness to perform, 6/30/95. P. 400099-400103.
41. Letter to Mr. Eric Newman, U.S. EPA, from Ms. Karen J'Anthony, DNREC, re: Notification of the correct address for the submittal of Uniform Hazardous Waste Manifest form copies, 7/12/95. P. 400104-400104.
42. Administrative Order for Removal Response Action In The Matter Of: Halby Chemical Superfund Site; Witco Corporation, Respondent; Docket No. III-95-55-DC, 7/20/95. P. 400105-400128.
43. Letter to Mr. Steven Kortanek, Phillips, Goldman & Spence, from Mr. Eric Newman, U.S. EPA, re: Confirmation that July 25, 1995, is the effective date of the unilateral administrative order (UAO) issued to Witco and confirmation of an EPA conference with Witco

scheduled for July 27, 1995, 7/24/95. P. 400129-400129.

44. Letter to Mr. Eric Newman, U.S. EPA, from Mr. James Nortz, Witco, re: Notification of the intent to comply with the terms of the UAO and notification that Witco designates Rajnikant Vyas as the project coordinator, 7/28/95. P. 400130-400131.
45. Letter to Ms. Patty Miller, U.S. EPA, from Mr. James Nortz, Witco, re: Submittal of Witco's objections to the UAO, Witco's objection to UAO's Finding of Facts section, and request for EPA's assistance in performing the ordered removal action, 8/4/95. P. 400132-400137.
46. Report: Response Action Plan, Halby Chemical Superfund Site, Wilmington, New Castle County, Delaware, EPA Docket No III-95-55-DC, prepared by Langan Engineering and Environmental Services, Inc. (Langan), 8/8/95. P. 400138-400234.
47. Letter to Mr. Rajnikant Vyas, Witco, from Mr. Eric Newman, U.S. EPA, re: Approval of Section 2.2.2 of the RAP to restrict access to contaminated areas at the site, notification that the access restriction must be completed on or before August 28, 1995, and request for confirmation that the workers have received Occupational Safety and Health Act (OSHA) training, 8/10/95. P. 400235-400238. An August 4, 1995, letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, regarding site security and an August 23, 1995, letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, regarding a possible delay in site security are attached.
48. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: Response to EPA's August 18, 1995, comments on the RAP, 8/30/95. P. 400239-400246.
49. Letter to Mr. R.D. Vyas, Witco, from Mr. Eric Newman, U.S. EPA, re: Confirmation that EPA received the revised draft RAP on September 5, 1995, 9/21/95. P. 400247-400247.
50. Letter to Mr. R.D. Vyas, Witco, from Mr. Eric Newman, U.S. EPA, re: Comments on the September 4, 1995, revised draft RAP, the field sampling plan, the quality assurance project plan, and the health and safety plan; and explanation of four issues which need to be

addressed at the site immediately, 10/20/95.
P. 400248-400264.

51. Report: Alternative Remedial Contracting Strategy Program, Sampling and Analysis Plan, Halby Chemical Company, Operable Unit 1 ERA Oversight, prepared by CH2M Hill, 11/95. P. 400265-400504.
52. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: Request for a two week extension to respond to EPA and DNREC's comments on the draft RAP, 11/1/95. P. 400505-400505.
53. Letter to Mr. Eric Newman, U.S. EPA, from Mr. John Phillips, Jr., Phillips, Goldman & Spence, re: Documentation that EPA agreed to provide Mr. John Phillips, Jr., with a copy of any consent decree entered into by the government and Brandywine Chemical, 11/1/95. P. 400506-400506.
54. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: Response to the "Immediate Actions" issues discussed in EPA's October 20, 1995, comments on the draft RAP, 11/2/95. P. 400507-400509.
55. Letter to Mr. R.D. Vyas, Witco, from Mr. Eric Newman, U.S. EPA, re: Approval of Witco's request for an extension on the submittal of a revised RAP to November 20, 1995, 11/3/95. P. 400510-400510.
56. Report: Halby Chemical Site, Review of Constituent of Concern Toxicity, prepared by ERM, 11/14/95. P. 400511-400528. A November 14, 1995, transmittal letter to Mr. Eric Newman, U.S. EPA, from Mr. Richard Dulcey, ERM, is attached.
57. Report: Trip Report, Halby Chemical Site, Wilmington, New Castle Co., DE, (no author cited), 11/16/95 - 11/20/95. P. 400529-400561. A February 2, 1996, transmittal memorandum to Mr. Eric Newman, Ms. Barbara O'Korn, and Mr. Rod Turpin, U.S. EPA, and Ms. Jane Biggs, DNREC, from Mr. Michael Towle, U.S. EPA; a

January 17, 1996, transmittal letter to Mr. Mike Towle, U.S. EPA, from Ms. Marian Murphy, Weston; and a November 17, 1995, Data Quality Report are attached.

58. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for December 5, 1995, through December 23, 1995, and a list of planned activities, 12/22/95. P. 400562-400564.
59. Report: Preliminary Site Assessment Report, Halby Chemical Superfund Site, Wilmington, New Castle County, Delaware, EPA Docket No III-95-55-DC, prepared by Langan, 12/22/95. P. 400565-400732.
60. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: Transmittal of the preliminary site assessment (PSA) report, 12/22/95. P. 400733-400733.
61. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for December 24, 1995, through January 12, 1996, and a list of planned activities, 1/12/96. P. 400734-700736.
62. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for January 13, 1996, through January 27, 1996, and a list of planned activities, 1/25/96. P. 400737-400739.
63. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for February 10, 1996, through February 23, 1996, list of planned activities, and proposal to change the progress report schedule from 15 to 30 calendar days, 2/23/96. P. 400740-400794.
64. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for February 24, 1996, through March 8, 1996, and a list of planned activities, 3/8/96. P. 400795-400837.
65. Letter to Mr. Eric Newman, U.S. EPA, from Ms. Carole Sforza and Mr. William Mercurio, Langan, re: Notification that Langan will continue to generate progress reports according to the schedule set in the UAO, 3/11/96. P. 400838-400838.
66. Letter to Mr. Eric Newman, U.S. EPA, from Mr. William

Mercurio, Langan, re: Request for EPA to approve a revised schedule for the submittal of the remedial action report, the risk assessment, and the treatability study; and explanation of problems that occurred and the reasons for the revised schedule, 3/13/96. P. 400839-400844. A table, "1996 Project Schedule, Halby Chemical Superfund Site, Wilmington, New Castle County, Delaware" is attached.

67. Letter to Mr. William Mercurio, Langan, from Mr. Eric Newman, U.S. EPA, re: Contingent acceptance of the proposed schedule revision and a list of changes necessary for the schedule to be accepted, 3/19/96. P. 400845-400845.
68. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for March 9, 1996, through March 22, 1996, and a list of planned activities, 3/22/96. P. 400846-400919.
69. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: Response to a February 5, 1996, EPA letter and to the UAO item which requires Witco to develop and submit for approval, soil clean-up level(s) sufficient to protect human health and the environment, 3/25/96. P. 400920-400983. The following are attached:
 - a) a March 25, 1996, report, "Halby Chemical Site, Review of Arsenic Carcinogenicity by Oral Exposure;"
 - b) a January 3, 1996, report, "Halby Chemical Site, Review of Ground Water Migration Exposure;"
 - c) a March 31, 1997, table, "Table 1 - Phase II Field Treatability Study Pretreatment Carbon Disulfide Concentrations (mg/kg);"
 - d) a March 31, 1997, table, "Table 2 - Phase II Field Treatability Study Treatment Protocols;"
 - e) an undated table, "Table 3 - Analytical Parameter Sample Matrix;"

- f) a March 25, 1996, report, "Halby Chemical Site, Development of Human Health Screening Levels for Additional Constituents;"
 - g) a February 28, 1996, report, "Review of U.S. EPA's Derivation of Provisional Thiocyanate RfD, Stauffer/LeMoyne Site."
- 70. Report: Screening Treatability Study, Halby Chemical Superfund Site, Wilmington, New Castle County, Delaware, EPA Docket No. III-95-55-DC, prepared by Fahrenthold & Associates, Inc. and ECD Environmental, Inc., 3/29/96. P. 400984-401075. A March 29, 1996, transmittal letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, is attached.
- 71. Memorandum to Ms. Joan Mattox from Mr. Eric Newman, U.S. EPA, re: Request for Office of Research and Development (ORD) technical assistance on the evaluation of a PRP-lead treatability study, 4/3/96. P. 401076-401077.
- 72. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for March 23, 1996, through April 4, 1996, and a list of planned activities, 4/4/96. P. 401078-401089.
- 73. Memorandum to Mr. Eric Newman, U.S. EPA, from Ms. Nancy Rios Jafolla, U.S. EPA, re: Comments on the risk evaluation responses to comments on proposed soil cleanup levels, 4/11/96. P. 401090-401093.
- 74. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Robert Root, Jr., CH2M Hill, re: Summary of the milestones achieved and performance highlights for the 19th semester, 4/17/96. P. 401094-401095.
- 75. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for April 5, 1996, through April 19, 1996, and a list of planned activities, 4/19/96. P. 401096-401103.
- 76. Report: Sampling Plan, Bio 7 Location Site, Wilmington, New Castle County, DE, (no author cited), 4/22/96. P. 401104-401133. The following are attached:
 - a) a table, "Table A1, Halby Chemical Site, 11/16/95 Water Samples - Metals Analysis,

Results in ppb;"

- b) a table, "Table A2, Halby Chemical Site, 11/16/95 Water Samples - Hardness, Sulfide, Ammonia, Thiocyanate, BOD, Amenable Cyanide, and Oil and Grease Analysis, Results in ppm;"
- c) a table, "Table A3, Halby Chemical Site, 11/16/95, Sediment Samples - Base Neutral Analysis, Results in ppb;"
- d) a table, "Table A4, Halby Chemical Site, 11/16/95, Sediment Samples - Volatile Organic Analysis, Results in ppb;"
- e) a table, "Table A5, Halby Chemical Site, 11/16/95, Sediment Samples - Metals Analysis, Results in ppm;"
- f) a table, "Table A6, Halby Chemical Site, 11/16/95, Sediment Samples - TPHC, Reactivity, Ammonia, Thiocyanate, TOC Analysis and Grain Size, Results in ppm and Grain Size in mm;"
- g) a table, "Table A7, Halby Chemical Site, 11/16/95, Sediment Samples - Herbicide, Pesticide and PCB Analysis, Results in ppb;"
- h) a table, "Table A8, Halby Chemical Site, 11/20/95, Air Samples, Results in ppb;"
- i) figures and sample analysis tables, "Halby Chemical Site, 'Ditch' Sample Locations, June 1995, Technical Assistance Team,"
- j) a table, "Halby Chemical Site 'Ditch' Samples, Carbon Disulfide Samples: June, 1995;"
- k) a table, "Halby Chemical Site 'Ditch' Samples, Ignitability, Reactive Cyanide + Sulfide and Ammonia: June, 1995;"
- l) a table, "Halby Chemical Site 'Ditch' Samples, Metals (mg/Kg) (Selected): June 1995;"

- m) a table, "Halby Chemical Site 'Ditch' Samples, Volatile Organics (mg/Kg): June, 1995;"
 - n) a table, "Halby Chemical Site 'Ditch' Samples, Volatile Organic TICs (mg/Kg): June, 1995;"
 - o) a table, "Halby Chemical Site 'Ditch' Samples, Volatile Organic TICs: June, 1995;"
 - p) an undated table, "Halby Chemical - Disposal TCLP Analysis."
77. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: Preliminary waste classification report and application for a generator identification number, 4/30/96. P. 401134-401169.
 78. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for April 20, 1996, through May 3, 1996, and a list of planned activities, 5/3/96. P. 401170-401174.
 79. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: Progress report for the treatability study, 5/8/96. P. 401175-401193. An April 19, 1996, memorandum report to Mr. Rajnikant Vyas, Mr. W. Mercurio, and Mr. R. Dulcey from Mr. Paul Fahrenthold, Fahrenthold & Associates, Inc. and Mr. Greg Bybee, ECD Environmental, entitled "Progress Report, Treatability Study, Halby Site;" a May 6, 1996, memorandum report to Mr. Rajnikant Vyas, Mr. W. Mercurio, and Mr. R. Dulcey from Mr. Paul Fahrenthold, Fahrenthold & Associates, Inc. and Mr. Greg Bybee, ECD Environmental, entitled "Progress Report, Treatability Study, Halby Site;" and an April 26, 1996, report, "Halby Chemical Site, Wilmington, Delaware, Summary of Meetings with Remediation Contractors," are attached.
 80. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for May 4, 1996, through May 17, 1996, and a list of planned activities, 5/17/96. P. 401194-401196.
 81. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Robert Root, Jr., CH2M Hill, re: Review of Witco's progress reports for April 5, 1996, through May 3, 1996, 5/21/96. P. 401197-401198.

82. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for May 18, 1996, through May 31, 1996, and a list of planned activities, 5/31/96. P. 401199-401200.
83. Report: Treatability Study Summary, Progress Report, Oxidation of Carbon Disulfide in Soils - Halby Chemical Site, New Castle, Delaware, prepared by Fahrenthold & Associates and ERM, 6/17/96. P. 401201-401233. A June 17, 1996, transmittal letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, is attached.
84. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for June 16, 1996, through June 30, 1996, and a list of planned activities, 6/28/96. P. 401234-401235.
85. Report: Laboratory Treatability Study Report, Oxidation of Carbon Disulfide in Soils - Halby Chemical Site, New Castle, Delaware, prepared by Fahrenthold & Associates and ERM, 7/2/96. P. 401236-401296.
86. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for July 1, 1996, through July 15, 1996, and a list of planned activities, 7/15/96. P. 401297-401299.
87. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for July 16, 1996, through July 31, 1996, and a list of planned activities, 7/31/96. P. 401300-401302.
88. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: Response to EPA's July 16, 1996, comments on the treatability studies, documentation of the July 29, 1996, meeting with EPA, Witco, and Langan, and transmittal of the laboratory treatability data packages which were not available when Witco submitted the Laboratory Treatability Study Report, 8/6/96. P. 401303-401311. An August 6, 1996, table, "Halby New Castle Site, Site Specific Risk Input" is attached.
89. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant

Vyas, Witco, re: RAP implementation progress report for August 1, 1996, through August 15, 1996, and a list of planned activities, 8/15/96. P. 401312-401315.

90. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for August 16, 1996, through August 31, 1996, and a list of planned activities, 8/30/96. P. 401316-401318.
91. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for September 1, 1996, through September 15, 1996, and a list of planned activities, 9/16/96. P. 401319-401321.
92. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for September 16, 1996, through September 30, 1996, and a list of planned activities, 9/30/96. P. 401322-401324. A September 30, 1996, table, "Revised Schedule" is attached.
93. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for October 1, 1996, through October 15, 1996, and a list of planned activities, 10/15/96. P. 401325-401331. An October 16, 1996, table, "Halby Chemical Site, Final Lab Treatability Study Results;" an October 16, 1996, table, "Summary of Soil Data - Field Treatability Study Pretreatment Soil Borings, Discrete Soil Samples, Halby Chemical Superfund Site, Wilmington, Delaware;" and an October 16, 1996, table, "Summary of Soil Analytical Data - Field Treatability Study Pretreatment Borings, Composite Soil Samples, Halby Chemical Superfund Site, Wilmington, Delaware" are attached.
94. Report: Draft Field Treatability Study Plan, Oxidation of Carbon Disulfide in Soils - Halby Chemical Site, New Castle, Delaware, prepared by ERM, 10/24/96. P. 401332-401353. An October 24, 1996, transmittal letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, is attached.
95. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for October 16, 1996, through October 31, 1996, and a list of planned activities, 10/31/96. P. 401354-

401356.

96. Map, "Average CS2 Points," prepared by ERM, 11/4/96-11/12/96. P. 401357-401357.
97. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Raj Vyas, Witco, re: Transmittal of the final laboratory treatability study data packages, 11/14/96. P. 401358-401358.
98. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Raj Vyas, Witco, re: RAP implementation progress report for November 1, 1996, through November 15, 1996, and a list of planned activities, 11/15/96. P. 401359-401360.
99. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for November 16, 1996, through November 30, 1996, and a list of planned activities, 11/27/96. P. 401361-401364. A November 21, 1996, table, "Halby Field Treatability Study" is attached.
100. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: Response to EPA's November 15, 1996, comments on the field treatability study plan, 12/3/96. P. 401365-401369.
101. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: Transmittal of a final laboratory treatability study data package for the caustic soak test, 12/16/96. P. 401370-401371.
102. Data analysis package, "Halby Chemical, December 1996 Field Analysis Report Form, Estimation of Carbon Disulfide with Dilution Factor," (no author cited), 12/21/96. P. 401372-401403.
103. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: RAP implementation progress report for December 1, 1996, through December 31, 1996, and a list of planned activities, 12/31/96. P. 401404-401407.
104. Data analysis package, "Rush Data Results, Volatile Organics - GC/MS," prepared by Envirotech Research, Inc. (Envirotech), 1/2/97. P. 401408-401433. The following are attached:
 - a) a January 2, 1997, facsimile transmittal

memorandum to Mr. Rich Dulcey, ERM, from Mr. Jim Schwalje, Envirotech;

- b) two December 21, 1996, through December 24, 1996, sample analysis tables, "Toxicity Characteristic Leaching Procedure, Metals Analysis;"
 - c) a December 21, 1996, through December 30, 1996, sample analysis table, "Soluble Sulfate;"
 - d) a December 21, 1996, through December 26, 1996, sample analysis table, "Sulfide;"
 - e) a December 21, 1996, through December 26, 1996, sample analysis table, "pH;"
 - f) a December 21, 1996, through December 31, 1996, sample analysis table, "Soluble Cyanide;"
 - g) a December 21, 1996, through December 27, 1996, sample analysis table, "Total Cyanide;"
 - h) two December 24, 1996, Inorganic Analyses Data Sheets.
105. Letter to Mr. Rajnikant Vyas, Witco, from Mr. Eric Newman, U.S. EPA, re: Notification that Witco may be conducting unauthorized work at the site and request for a full accounting of all work Witco has completed and/or intends to complete which has not been included in the approved RAP or RAP supplements, 1/3/97. P. 401434-401435.
106. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rajnikant Vyas, Witco, re: Transmittal of the final laboratory treatability study data package for a December 4, 1996, no treatment test (F7) and summary of the basis for the no treatment test (F7) and for the caustic soak test (F6), 1/7/97 (sic). P. 401436-401438. A January 7, 1997, table, "Halby Chemical Site, Final Lab Treatability Study Results" is attached.
107. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Bob Bujalski, Witco, re: Response to EPA's January 3, 1997, letter concerning the conduct of unauthorized

- work at the site, 1/10/97. P. 401439-401531.
108. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Rich Dulcey, ERM, re: Notification of the proposed clean out and removal of the Baker Tank from the site, 1/13/97. P. 401532-401533.
 109. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Bob Bujalski, Witco, re: RAP implementation progress report for January 1, 1997, through January 15, 1997, and a list of planned activities, 1/16/97. P. 401534-401539. A January 16, 1997, table, "Halby Chemical Superfund Site, Wilmington, Delaware, Field Treatability Study, Pretreatment vs. Post-Treatment Discrete Samples, Carbon Disulfide Concentration (mg/kg)" and a January 16, 1997, table, "Halby Chemical Superfund Site, Wilmington, Delaware, Field Treatability Study, Pretreatment vs. Posttreatment Composite Samples" are attached.
 110. Report: Phase 2 Field Treatability Study Plan, Oxidation of Carbon Disulfide in Soils - Halby Chemical Site, New Castle, Delaware, prepared by ERM, 4/7/97. P. 401540-401581.
 111. Report: Full-Scale Implementation Work Plan, Oxidation of Carbon Disulfide in Soils - Halby Chemical Site, New Castle, Delaware, prepared by ERM, 8/1/97. P. 401582-401675.
 112. DNREC Uniform Hazardous Waste Manifest form, copy 1, (undated). P. 401676-401676.
 113. Letter to Mr. R. D. Vyas, Witco, from Mr. Eric Newman, U.S. EPA, re: Comments on the August 8, 1995, draft RAP and request for a revised RAP with the incorporated comments to be submitted within ten days, (undated). P. 401677-401682.
 114. Map, "Figure 4-38, On-Site Soils - VOC Concentrations, Remedial Investigation & Feasibility Study (RI/FS), Halby Chemical Site, New Castle County, Delaware," prepared by AEPCO, (undated). P. 401683-401683.
 115. Map, "Magnetometer Coverage at the Halby Chemical Site, New Castle County, Delaware," (no author cited),

(undated). P. 401684-401684.

116. Map, "Halby Chemical Site, TAT Sample Locations," (no author cited), (undated). P. 401685-401685.
117. Location Map, Halby Chemical Company, Wilmington, New Castle County, Delaware, prepared by Weston, (undated). P. 401686-401686.
118. Table, "Table 3, Percent Survival of Hyaletella Azteca in 10-day Solid-Phase Toxicity Test," (no author cited), (undated). P. 401687-401697. The following are attached:
 - a) an undated, untitled summary discussing "overall apparent effects thresholds" as target clean up levels for treatability studies and for achieving levels protective of wetland community receptors;
 - b) an undated map, "Figure 2, The Halby Chemical Site Near Wilmington, Delaware; Sediment Sampling Stations and Concentrations (mg/kg) of Select Contaminants of Concern;"
 - c) an undated table, "Table 3, Maximum and Minimum Concentrations (ug/l) of Major Contaminants Observed in Surface and Groundwater (AEPCO, Inc., 1990) Compared to EPA Ambient Water Quality Criteria (AWQC) for the Protection of Freshwater Organisms (U.S. EPA, 1986);"
 - d) an undated table, "Table 4, Maximum and Minimum Concentrations (mg/kg) of Major Contaminants Observed in Soils (AEPCO Inc., 1990) Compared to Background Levels in Uncontaminated Soils of the United States (U.S. EPA, 1983) and Sediments Compared to ER-L Values (Long and Morgan, 1990);"
 - e) an undated table, "Table 5, Maximum Surface Water Concentrations (ug/l) (AEPCO Inc., 1990) Compared to the Range of Concentrations Over Which Toxicity has been Observed in Other Studies (Clement Associates, 1985; CHRIS, 1988; AQUIRE, 1985);"

- f) two January 1991 maps, "Figure 2, Halby Chemical Site Map;"
 - g) an undated table, "Halby Chemical Site, Wilmington, DE, Final Report, February 1991;"
 - h) an undated sample analysis table, "Results of the Grain Size Analysis;"
 - i) an undated, untitled sample analysis table.
119. Table, "Table 3.3, Water Matrix - Field Analysis," (no author cited), (undated). P. 401698-401698.
120. Environmental Technology of North America, Inc., Drum Inventory & Compatibility Testing Log, (undated). P. 401699-402201.

V. COMMUNITY INVOLVEMENT/CONGRESSIONAL CORRESPONDENCE/IMAGERY

1. Letter to Ms. Francesca DiCosmo, U.S. EPA, from Ms. Catherine Ferguson, Ebasco, re: Transmittal of attendance lists for the public officials briefing and the public meeting held May 2, 1991, for the Halby Chemical Superfund Site, 5/13/91. P. 500001-500007. The attendance lists are attached.
2. Report: Final Community Relations Plan, Halby Chemical Site, prepared by NUS Corporation, 8/91. P. 500008-500033.
3. Soil Grid Sampling Locations map, Halby Chemical site, prepared by Langan, 5/15/92. P. 500034-500034.
4. Security Fence map, Halby Chemical Site, prepared by Langan, 8/15/95. P. 500035-500035.
5. Flood Insurance Rate Map, New Castle County, Delaware and incorporated areas, prepared by Federal Emergency Management Agency, 4/17/96. P. 500036-500039. An April 17, 1996, transmittal memorandum to Mr. Eric Newman, U.S. EPA, from Ms. Jane Biggs Sanger, DNREC, is attached.
6. Attendance list for U.S. EPA meeting, Halby Chemical Site, 10/23/96. P. 500040-500040.
7. Photographs of Halby Chemical Site assessment/sampling, 10/1/87. P. 500041-500055.
8. Wetlands in the Vicinity of the Halby Chemical Site figure, undated. P. 500056-500056.
9. Soils figure, Halby Chemical Site, undated. P. 500057-500057.
10. Letter to De La Warr Community Service Center from Ms. Gloria Farrell, Newark resident, re: Opposition to the selected remedy for the site, 8/11/97. P. 500008-500059. An envelope is attached.
11. Transcript of Public Meeting for Proposed Plan, Halby Chemical Site, 8/18/97. P. 500060-500157.
12. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Herbert

Bollman, F & H Trucking, re: Response to the August 18, 1997, public meeting, and support of the Proposed Plan, 8/21/97. P. 500158-500159. An envelope is attached.

13. Letter to the Honorable Joseph Biden, U.S. Senate, from Mr. Samuel Guy, City of Wilmington, re: Request for EPA to extend the 30 day public comment period until EPA provides the community with a Technical Assistance Grant application, 8/28/97. P. 500160-500161. An August 29, 1997, routing and transmittal slip to Mr. Abraham Ferdas, U.S. EPA, from Mr. Shawn Garvin, U.S. EPA, is attached.
14. Letter to Mr. Eric Newman, U.S. EPA, from Mr. Thomas Noyes, City of Wilmington, re: Comments on the Proposed Plan, 9/29/97. P. 500162-500166. An envelope is attached.
15. Letter to Mr. Eric Newman, U.S. EPA, from Ms. Regina Katz, Sierra Club, Delaware Chapter, re: Comments on the Proposed Plan, 9/29/97. P. 500167-500169. An envelope is attached.

GUIDANCE DOCUMENTS

1. "Treating Industrial Wastewater with Hydrogen Peroxide," Plant Engineering, 11/15/79. A September 19, 1996, transmittal memorandum is attached.
2. "Kinetics of Hydrolysis and Oxidation of Carbon Disulfide by Hydrogen Peroxide in Alkaline Medium and Application to Carbonyl Sulfide," Environmental Science & Technology, Vol. 21, February 1987.
3. "Lactoperoxidase-Catalyzed Oxidation of Thiocyanate by Hydrogen Peroxide: Nuclear Magnetic Resonance and Optical Spectral Studies," Biochemistry, Vol. 30, 1991.
4. Memorandum to Regional Division Directors, U.S. EPA, from Mr. Bruce Diamond, Mr. Henry Longest, and Mr. Robert Wayland, U.S. EPA, re: Guidance of new information for considering wetlands at Superfund sites, 5/9/94.
5. Assessing Dermal Exposure from Soil, Technical Guidance Manual Risk Assessment, prepared by U.S. EPA, 12/95. A December 29, 1995, transmittal memorandum is attached.
6. Interim Guidance on Screening Levels for Hazardous Substances Discovered during Site Assessments under the Delaware Hazardous Substance Cleanup Act, prepared by DNREC, 3/96. A July 25, 1996, transmittal memorandum is attached.
7. Dangerous Properties of Industrial Materials, prepared by N. Irving Sax, undated.
8. Environmental Risk Assessment Guidelines, U.S. EPA Region III Superfund Technical Support Section, undated.
9. Delaware Air Pollution Control, Regulation No. 6, "Particulate Emissions from Construction and Materials Handling," 02/01/81.
10. Laboratory Analysis Reports, prepared by Edward H. Richardson Associates, Inc., 6/19/85. Sampling notes and a map entitled, "Wilmington Harbor Disposal Area," are attached.
11. Report: Mixing Zone Study, Corp of Engineers

Maintenance Dredging Project, Christina River/Wilmington Harbor, prepared by USACE, 9/86.

12. "Reference Dose for Chronic Oral Exposure (RfD): Arsenic, Inorganic," prepared by U.S. EPA, 11/15/90.
13. Memorandum to Mr. Michael Dourson and Ms. Annie Jarabek, U.S. EPA, from Mr. William Farland, U.S. EPA, re: Resolution of the Arsenic Oral RfD Issue, 8/13/91. A handwritten calculation is attached.
14. Report: Final Report, Water Quality Monitoring for Wilmington Harbor Maintenance Dredging Operations, prepared by The Greeley-Polhemus Group, Inc. and RMC Environmental Services, Inc., 7/93.
15. Report: Dredged Material Data for Wilmington Harbor, 1991-1993, prepared by USACE, 8/93.
16. Guidance on Considering Wetlands at Superfund Sites, prepared by U.S. EPA, 5/94. A May 9, 1994, transmittal memorandum is attached. OSWER #9280.0-03
17. Memorandum to Regional Division Directors from Mr. Elliott Laws, U.S. EPA, re: Land Use in the CERCLA Remedy Selection Process, 5/25/95. A June 7, 1995, transmittal letter is attached. OSWER #9355.7-04
18. Report: Whole Basin Management Program, Draft Framework Document, prepared by DNREC, 3/96.
19. Report: The Northern Delaware Wetlands Rehabilitation Plan, the Christina & Delaware Rivers Urban Wetland Corridor Rehabilitation, prepared by DNREC, (undated).
20. Excerpt from Brownfield Preliminary Assessment II of Delmarva Power and Light Substation/DuPont Christina Labs Site Report, prepared by DNREC, (undated).
21. Report: Whole Basin Management Questions and Answers, (no author cited), (undated).